CLAIMS

We claim:

1. An apparatus for sensing the amplitude of a signal traveling through a body, the signal generated by an excitation device operatively engaging the body, comprising:

a sensing electrode operatively engagable with the body under a pressure downstream of the excitation device for sensing the signal generated by the excitation device; and

a pressure mounting structure operatively connected to the sensing electrode for controlling the pressure at which the sensing electrode engages the body.

2. The apparatus of claim 1 wherein the pressure mounting structure includes a pressure source operatively connected to the sensing electrode for applying the pressure at which the sensing electrode engages the body.

3. The apparatus of claim 2 wherein the pressure source includes a micrometer configured to adjust the pressure at which the sensing electrode engages the body.

4. The apparatus of claim 1 further comprising a pressure sensor disposed adjacent the sensing electrode, the pressure sensor generating a pressure signal corresponding to the pressure at which the sensing electrode engages the body.

5. The apparatus of claim 4 wherein the pressure sensor includes a load cell.

6. The apparatus of claim 4 further comprising a controller electrically connected to the pressure sensor for receiving the pressure signal and to the sensing electrode for receiving the signal sensed by the sensing electrode.

7. The apparatus of claim 6 wherein the controller performs the step of:

determining a pressure normalization ratio from pressure signals acquired from the pressure sensor.

8. The apparatus of claim 7 wherein the controller further performs the step of:

normalizing the acquired conduction signal from the sensing electrode based on the pressure normalization ratio.

9. The apparatus of claim 7 wherein the controller performs the step of:

displaying a pressure value representative of the pressure at which the sensing electrode engages the body.

10. The apparatus of claim 1 further comprising a positioning structure operatively connected to the sensing electrode for positioning the sensing electrode at a user selected location adjacent the body.

11. The apparatus of claim 10 wherein the positioning structure includes a vertical positioning device, the vertical positioning device allowing a user to adjust the vertical position of the sensing electrode relative to the body.

12. The apparatus of claim 10 wherein the positioning structure includes a dial configured to rotate the sensing electrode about a horizontal axis so as to allow a user to control an angle at which the sensing electrode engages the body.

13. The apparatus of claim 10 wherein the positioning structure includes a light source configured to illuminate a grid on the body to facilitate the positioning of the sensing electrode on the body.

14. The apparatus of claim 1 wherein a pressure mounting structure includes a strap operatively connected to the pressure sensor and sensing electrode for holding the sensing electrode against the body.

15. An apparatus for sensing a signal traveling through a body, the signal generated by an excitation source, comprising:

a sensing electrode operatively engagable with the body downstream of the excitation device for sensing the signal generated by the excitation device; and

a pressure source configured to provide a pressure at which the sensing electrode engages the body.

16. The apparatus of claim 15 wherein the pressure source includes a micrometer configured to selectively control the pressure at which the sensing electrode against the body.

17. The apparatus of claim 15 further comprising a pressure sensor coupled between the pressure source and the sensing electrode, the pressure sensor generating a pressure signal representative of the pressure at which the sensing electrode engages the body.

18. The apparatus of claim 17 wherein the pressure sensor includes a load cell.

19. The apparatus of claim 15 further comprising a light source configured to illuminate a grid on the body, the grid providing a guide for positioning the sensing electrode on the body.

20. The apparatus of claim 15 further comprising a pressure mounting structure operatively connected to the pressure source for orientating the pressure along an axis normal to the body.

21. The apparatus of claim 20 wherein the pressure mounting structure includes a strap that holds the pressure sensor and sensing electrode against the body.

22. The apparatus of claim 21 wherein the strap is configured with a micrometer for changing tension in the strap and providing the pressure at which the sensing electrode engages the body.

23. The apparatus of claim 17 further comprising a controller electrically connected to the pressure sensor and to the sensing electrode, the controller acquiring the pressure signal from the pressure sensor and the signal from the sensing electrode.

24. The apparatus of claim 23 wherein the controller performs the steps of:

determining a pressure normalization ratio based on the pressure signal from the pressure sensor; and

normalizing the signal from the sensing electrode based on the pressure normalization ratio.

25. A method for sensing a signal traveling through a body, the signal generated by an excitation device operatively engaging the body, the method comprising the steps of:

positioning a sensing electrode on the body;

exerting a pressure on the sensing electrode against the body; and

receiving the signal with the sensing electrode.

26. The method of claim 25 comprising the additional steps of:

generating a pressure signal representative of the pressure at which the sensing electrode engages the body; and

determining a pressure normalization ratio in response to pressure signal.

27. The method of claim 26 comprising the additional step of normalizing the signal received by the sensing electrode in response to the pressure normalization ratio.

28. The method of claim 27 wherein the pressure exerted on the sensing electrode is normal to the body.

29. The method of claim 25 comprising the additional step of:

measuring the amplitude level of the signal received with the sensing electrode.

30. The method of claim 25 comprising the additional steps of:

repeating the pressure exerted on the sensing electrode against the body;

receiving the signal with the sensing electrode; and

measuring the amplitude level of the signal received with the sensing electrode.